The Efficacy of Demand-Side Regulation in Controlling Social Security Drug Reimbursement Expenditure in Algeria: An Assessment

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Abstract:
In Algeria, the long-standing growth of healthcare expenditure, particularly in the pharmaceutical sector, has led to the implementation of a demand-side health expenditure of regulation policy. The policy has taken the form of modifying drug reimbursement rules to financially responsabilie patients by limiting the financial impact on collective financing entities, namely the state budget and social insurance. This study sought to review the rationing mechanisms pertaining to demand and assess their effectiveness in controlling social security drug reimbursement expenditure. The findings clearly indicate that, despite these measures, drug reimbursement expenditure shows a steady and continuous increase, remaining a heavy burden on both the state budget and the social security system.

Keywords: Drug reimbursement, Regulatory policy, Social security, Health expenses, Algeria
Jel Classification Codes: I11, I18, H55

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1. INTRODUCTION

Recent developments in global health systems have been marked by a significant rise in expenditures, outpacing the growth of Gross Domestic Product (GDP). This trend has led to resource scarcity, necessitating rationing measures. As revenues stagnate amid escalating costs, governments are compelled to implement regulatory tools to manage health spending through successive reforms.

Algeria, like many nations, has experienced a rapid increase in health expenditures over recent decades. In 2023, the health budget reached approximately 616 billion dinars, a sharp rise from just 16 billion dinars in 2010. Concurrently, health spending as a percentage of GDP has climbed steadily, reaching 5.53% in 2021 (WHO, 2023), imposing a substantial burden on the state budget.

Similarly, the social security system—the primary financier of healthcare—faces a precarious financial balance, as its revenues struggle to match surging expenditures. For instance, in 2023 alone, social security disbursed over 288 billion dinars in drug reimbursement costs, compared to a mere 0.94 billion dinars in 1990 (World Bank, 2023).

Given these challenges, Algerian policymakers have prioritized the regulation of health expenditures to curb their expansion and safeguard the financial stability of social security.

This regulatory approach, aligned with World Bank recommendations, has emphasized cost-recovery measures, particularly targeting demand-side factors. Key reforms have focused on enhancing patient financial accountability, primarily through modifications to drug reimbursement policies (Oufriha, 2006b). Rather than controlling overall expenditure growth, these measures aim to mitigate its impact on public and social insurance financing, given that pharmaceuticals constitute a major—and growing—component of health spending.

Against this backdrop, this article examines the foundations and outcomes of Algeria's demand-side health expenditure regulation policy, particularly its role in controlling social security spending on drug reimbursements. Specifically, it addresses the following research question:

What is the contribution of demand regulation policy via the financial accountability of patients in the control of social security spending on drug reimbursement in Algeria?

To address this research question, the following hypothesis is proposed:

- The implementation of a demand-side regulation policy is expected to contribute positively to the rationalization of social security drug reimbursement expenditures.

This article is structured into two main sections. First, we will examine the theoretical foundations of demand-side regulation in healthcare. Second, we will analyze the case of Algeria, focusing on two key aspects:

- The rationale behind adopting a demand-driven health expenditure regulation policy, and
- An assessment of demand-side rationing mechanisms and their effectiveness in controlling social security drug expenditures.

2. Theoretical Frameworks for Healthcare Demand Regulation

The economic rationale for demand-side regulation in healthcare stems from the premise that insurance coverage creates incentives for overconsumption, as insured individuals exercise discretion over healthcare expenditures while reimbursement levels remain tied to incurred costs (Chambaretaud & Hartmann, 2004).

Economic theory justifies demand accountability by highlighting insurance's perverse effects, particularly moral hazard, which occurs when insured individuals, aware of their coverage, engage in behaviors that insurers cannot effectively monitor or control. The literature identifies two distinct forms of moral hazard: ex-ante moral hazard, characterized by reduced preventive efforts due to insurance coverage, and ex-post moral hazard, which manifests through increased healthcare utilization following adverse health events (Dionne, 1981).

(Pauly, 1968) seminal work first systematically examined moral hazard in health insurance, demonstrating how insurance coverage distorts consumption patterns by reducing or eliminating the marginal cost of care for insured individuals. When insurance fully covers medical expenses, the

effective price of healthcare approaches zero for the patient. Consequently, if demand exhibits price elasticity, insured individuals consume more healthcare services than they would when facing the actual market price. Conversely, perfectly inelastic demand would maintain constant consumption levels regardless of insurance status, indicating that insurance fundamentally alters healthcare consumption behavior.

This phenomenon of increased utilization may originate not only from patient-initiated demand but also from provider-induced factors. Under fee-for-service payment models, physicians may encourage more frequent visits when insurers reimburse each service without adequate oversight. The interaction between provider reimbursement mechanisms, insurance coverage structures, and regulatory controls can create aligned incentives between patients and providers that disadvantage insurers (Bardey, Couffinhal, & Grignon, 2002).

Empirical evidence strongly supports the moral hazard hypothesis, most notably through the RAND Health Insurance Experiment, which randomly assigned varying insurance plans to 2,000 American families. The study revealed an inverse relationship between cost-sharing requirements and healthcare utilization: lower patient co-payments consistently correlated with higher consumption. Notably, consumption patterns diverged significantly when co-payments reached 25%, while further increases in cost-sharing demonstrated diminishing marginal effects on utilization. These findings suggest that healthcare demand becomes particularly sensitive to price variations only beyond a substantial threshold of financial participation (approximately 25%), reinforcing the effectiveness of demand-side cost containment measures in regulating healthcare expenditures.

The moral hazard hypothesis, which posits a positive association between individual health expenditure levels and the extent of insurance coverage (whether public or private), has been empirically examined in subsequent research.

In the French context, scholars have systematically investigated the relationship between health insurance coverage and healthcare utilization patterns. (Caussat & Glaude, 1993) developed an econometric framework utilizing data from the 1980 Ten-Year Health Survey, demonstrating that

supplementary insurance coverage increased both the probability of healthcare utilization by 12 percentage points and average healthcare expenditures by approximately 30% relative to individuals without such coverage.

Extending this line of inquiry (Genier, 1998), conducted a comparable analysis employing data from INSEE's 1991-1992 Health Survey. The findings revealed that while supplementary insurance coverage did not significantly affect per-episode expenditure, it substantially increased healthcare utilization frequency. Specifically, individuals with complementary coverage exhibited 57% more annual care episodes (0.85 versus 0.54) compared to those with only basic compulsory insurance.

Further corroborating these results, (Raynaud, 2003) analyzed matched data from the 1992, 1995, and 1997 Credes Health and Social Welfare surveys with the permanent sample of insured workers. This study documented a 24% increase in outpatient care utilization among individuals with supplementary coverage, while finding no statistically significant effect on hospital care utilization. These findings collectively provide robust empirical support for the moral hazard phenomenon in healthcare consumption patterns.

Empirical research in developing countries has predominantly examined the role of health mutuals in improving healthcare access, (Smith & Sulzbach, 2008) multi-country study (Senegal, Mali, and Ghana) demonstrates that health mutual membership significantly increases utilization of maternal health services, particularly for costly delivery procedures in low-utilization areas. However, their findings indicate no corresponding behavioral changes in maternal care practices.

Further evidence from Cameroon (Awomo Ndongo & Tsafack Nanfosso, 2012) reveals a statistically significant positive relationship between insurance coverage levels and healthcare consumption among households enrolled in micro health insurance schemes. The study's principal finding suggests that mutual health insurance membership increases healthcare expenditure by 51.70% compared to uninsured individuals,

strongly indicating the presence of moral hazard effects through enhanced service utilization.

While the majority of existing studies confirm a robust positive correlation between individual health expenditures and insurance coverage levels, contrasting research has identified neutral or negative insurance effects on health outcomes. It should be noted that unlike the controlled experimental design of the US Rand Experiment, these studies typically rely on observational data from household health surveys. Notably, within the Algerian context, no empirical research has yet systematically investigated the potential existence of moral hazard in health insurance systems.

2.1. Patient accountability mechanisms

To mitigate ex-post moral hazard in healthcare systems, economists have proposed implementing patient cost-sharing mechanisms. These financial participation schemes serve dual purposes: moderating healthcare expenditures while simultaneously enhancing expenditure efficiency. By reintroducing price sensitivity, such mechanisms aim to steer patient consumption toward more cost-effective healthcare goods and services

Healthcare financing systems employ several demand-side cost-sharing instruments:

a. Co-payment: A fixed out-of-pocket payment required from patients regardless of actual treatment costs. This mechanism, commonly applied to hospital services, typically takes the form of a per-stay or per-service fee (Batifoulier, 2014, p. 5).

b. The deductible: Predetermined annual thresholds (usually calculated over 12-month periods) that patients must meet before insurance coverage activates. Below this threshold, patients bear full financial responsibility for healthcare expenses (Chambaretaud & Hartmann, 2009).

c. Co-insurance: This mechanism requires patients to contribute a fixed percentage of healthcare costs, with the remaining balance covered by public or private insurers. This system is widely implemented for physician consultations (both general practitioners and specialists) and pharmaceutical products in France, Belgium, and Switzerland, while Germany primarily applies it only to medications. In the United States, co-payment systems are

extensively used in private insurance plans and for numerous Medicare services targeting individuals aged 65 and above.

d. Reference Pricing: This policy establishes a maximum reimbursement threshold, with patients bearing the cost difference between the reference price and actual service charges. Predominantly used for pharmaceutical products in European markets (Batifoulier, 2014, p. 6).

e. De-listing: This policy intervention involves removing specific pharmaceutical products or medical procedures from reimbursement eligibility, requiring full patient payment regardless of insurance status. Implemented as a cost-containment strategy, de-listing targets medications and procedures considered non-essential or demonstrating limited therapeutic value. This approach directly reduces public healthcare expenditures by transferring financial responsibility for selected services to patients (Soubie, Portos, & Prieur, 1994, p. 51).

2.2. Protective Safeguards in Cost-Sharing Systems

Contemporary healthcare systems have instituted protective measures to counterbalance the potentially inequitable effects of demand-side financing mechanisms, addressing two critical policy objectives (Chambaretaud & Hartmann, 2009):

a. Solidarity Principle Preservation: The implementation of standardized cost-sharing arrangements in universal healthcare systems may inadvertently impose regressive financial burdens on high-need patient populations, thereby undermining the fundamental solidarity principle that underpins these systems.

b. Healthcare Access Equity: Uniform financial participation requirements risk creating socioeconomic barriers to care access, particularly among vulnerable demographic groups, potentially resulting in care deferral or avoidance behaviors among economically disadvantaged populations.

These safeguard mechanisms represent essential policy instruments designed to reconcile the dual imperatives of expenditure control and equitable healthcare provision within universal coverage systems.

3. Demand-Side Healthcare Regulation in Algeria: An Evaluation of Key Instruments

Algeria's healthcare expenditure regulation strategy has primarily focused on demand-side interventions, particularly through reforms in pharmaceutical reimbursement policies designed to increase patient financial responsibility (Oufriha, 2006a). This section examines the principal demand-side measures implemented and assesses their impact on controlling pharmaceutical expenditures.

3.1. Demand empowerment: forms and results

In Algeria, patient empowerment has taken three main forms: the reference tariff, the co-payment and the de-reimbursement of drugs.

a. Reference rate policy

The reference pricing system constitutes a fundamental policy instrument employed by health authorities to regulate pharmaceutical expenditure. Implemented with the triple objective of promoting generic drug utilization, reducing medication costs, and containing the growth of pharmaceutical spending (Hamadi & Ferdj, 2017).

The basic idea behind PR policies is relatively simple. Therapeutic group classifies drugs, deemed interchangeable by an insurer, and a capped reimbursement is unilaterally applied for each group, usually equivalent to the lowest price or median price in that group.

This pricing framework presents several distinct advantages: it stimulates competition within pharmaceutical markets, preserves physician prescribing autonomy, and establishes predictable reimbursement ceilings. The system's operational principle ensures that insurers reimburse a fixed amount per therapeutic group, regardless of the actual price of dispensed medications, with patients assuming financial responsibility for any price differentials exceeding the reference threshold. This represents a significant departure from ad valorem reimbursement models where insurer contributions fluctuate with drug prices.

While the PR system can result in substantial savings for the insurer, they are made possible only because reimbursements are capped for each group of drugs and because a portion of the risk is therefore passed on to policyholders. Indeed, insureds will receive limited coverage for drug

expenses whose price turns out to be higher than the reference price. It should be noted that in the case of a prescription of a more expensive drug, the insurer, unlike an ad valorem reimbursement policy that varies according to the selling price, does not take the difference between the price of the drug and the RA into account.

In addition (Nihoul & Simon, 2005), have noted that this approach may compromise the equity principles of third-party payer systems, particularly for chronically ill patients who, despite theoretical full coverage, often incur substantial costs when prescribed medications exceeding reference prices.

In Algeria, the reference rate (RR) for reimbursement was implemented by the CNAS in April 2006, following the ministerial decree of 29 December 2005 setting the reference rates used as a basis for the reimbursement of medicines and the modalities of their implementation (Keddad, 2007, p. 4). It is a Tariff set by the State, applicable for drugs considered to be substitutable for the purpose of contributing to the promotion of generic drugs (Djelouat & Lahlou, 2018).

The application of reference tariffs in Algeria began in April 2006 for 116 international non-proprietary names (INNs), i.e. for more than 1,000 brands, out of 1,135 refundable INNs corresponding to more than 3,000 brands (Snoussi, 2015). As of April 2018, there are 1433 reimbursable Inn-form-dosing drugs of which 672 **(**47%) are subject to TR. These INN-form-dosing drugs are marketed under 4,132 brands of which 2,633 are subject to TR (Conseil de la Concurrence, 2019, p. 74).

Empirical assessments of the system's impact face significant methodological challenges, as most studies employ simple pre-post comparisons of expenditures and prices without adequately controlling for concurrent policy changes. This limitation substantially constrains the validity of conclusions regarding the system's specific effects on pharmaceutical markets and spending patterns.

To the best of our knowledge, there has only been one study conducted in Algeria, and that was conducted by (Snoussi, 2015). It examined the effects of TR and the introduction of generics on the costs of both original

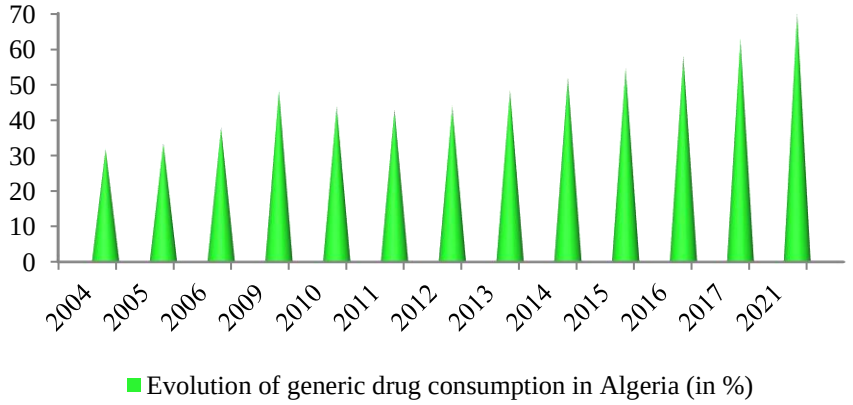
and generic medications. The author claims that the implementation of the reference tariff in Algeria had no appreciable effect on the pricing of generics. However, it did lower the prices of originals by roughly 9% between 2006 and 2011.The author claims that the implementation of the reference tariff in Algeria had no appreciable effect on the pricing of generics, but it did lower the prices of originals by roughly 9% between 2006 and 2011. The author cites a number of causes for this circumstance. First, a wide range of medications that are eligible for reimbursement are added to a system of mandated health insurance. Second, because demand is somewhat elastic and originator prices are higher than the reference tariff, originator producers will lower their prices to the reference tariff level (Snoussi, 2017, p. 101).

As a result, the prices of originals fall, while those of generics remain invariable. Moreover, and given the fact that princeps are considered to be better quality products, access to medicines will probably be in their favour, which is contrary to the objectives of the TR approach.

In addition, the first results of the application of the reference rate resulted in a feeling of injustice on the part of the insureds who thought of being sanctioned by their choice for the principle. In addition, they point out that it is the method of prescription that should change because the insured is completely unaware of the substance of this question. Similarly, the category that was sensitive to this measure is that of holders of third-party payment cards, because a pensioner or a chronic patient who until then had only to present his card to take his medicine is now obliged to pay cash the difference between the reference price and the Algerian public price (APP).

Nevertheless, it should be highlighted that even though drug prices have not decreased, 70% of people used these drugs in 2021, which allowed the government to lower import costs and guarantee local product availability through decisions (youcefi ،kadouri, 2025). Algeria's use of generics more than doubled between 2004 and 2020, rising from 31.99% in 2004 to 70% in 2021.

Fig.1. Evolution of generic drug consumption in Algeria (in %)



Source: By authors based on data from the ((MSPRH, 2024)

b. Copayment

Co-payment, in the context of health insurance, represents the residual financial responsibility borne by the patient following reimbursement by their health insurer. Its primary objective is to mitigate the phenomenon of "ex-post moral hazard." This refers to the opportunistic behaviors of insured individuals who, secure in their coverage, may disregard the actual costs of medical services, potentially leading to excessive consumption of healthcare and pharmaceutical products.

Co-payment functions by requiring patients to contribute a portion of healthcare expenditures at the point of service delivery, whether for medical care or drug dispensing. This mechanism applies to all or part of the services not fully covered by social security funds or private insurance schemes. As such, co-payment constitutes a direct form of patient contribution to the financing of healthcare costs (Abbou, 2018, p. 64).

Several approaches can be employed to adjust co-payment policies: First, Decreasing the Reimbursement Rate: This is the most conventional method, characterized by its ease of implementation and its capacity to promptly reduce short-term health insurance deficits. However, a significant drawback of this approach is its potential to impede access to care for economically vulnerable populations. In the absence of specific provisions for low-income individuals, this action indiscriminately increases the

financial burden on all insured persons, irrespective of their income level. Second, Restricting Co-payment Exemption Categories: Another strategy involves narrowing the list of conditions or situations that qualify for co-payment exemption (e.g., removing certain long-term conditions from the exemption list). This approach, however, presents considerable implementation challenges due to the potential for sudden and substantial financial repercussions for affected insured individuals (Debrand & Sorasith, 2010, p. 4).

The co-payment thus constitutes a key instrument for cost regulation within healthcare systems. However, its impact is not neutral, particularly for vulnerable populations such as low-income individuals, the elderly, or those suffering from chronic conditions. These patients may perceive the co-payment not only as a financial burden but also as a potential barrier to accessing necessary care. Consequently, although this mechanism aims to encourage the rational use of medical services, it may paradoxically lead to the underutilization of preventive or curative care, resulting in subsequent complications and higher costs for the healthcare system. Understanding this trade-off between cost containment and equitable access is therefore essential to inform public health policies and targeted support mechanisms.

Empirical studies examining the impact of co-payments consistently demonstrate that individuals required to make a monetary contribution for healthcare services consume less than those who receive care entirely free of charge. This holds true even if these contributions are subsequently reimbursed. In essence, consumers who bear a direct financial responsibility for their healthcare at the margin tend to reallocate their resources towards other types of goods and services (Boyer & Léger, 2011).

The potential regressive impact of co-payment, where a greater financial burden falls on lower-income individuals, raises significant concerns regarding equity in healthcare access and financing. Given the strong correlation between health status and income, co-payments risk a redistribution of income from less affluent, potentially sicker individuals, to healthier, wealthier segments of the population. Consequently, most nations employing co-payment systems endeavor to safeguard low-income groups and those with chronic illnesses through various mechanisms such as

exemptions and payment caps. However, implementing these protective measures often introduces increased administrative complexity, diminishes price transparency, and elevates the risk of fraud.

Algeria's healthcare financing landscape underwent a significant transformation from 1973, which marked the promulgation of free medicine. During this period, reimbursement rates were largely nonexistent, characterized by the public sector's dominance in healthcare provision, offering services free of charge. Concurrently, the private sector's presence was minimal, providing only limited services like consultations and general care.

The "official" opening of the private sector through the 1982 legislative texts spurred a substantial shift in healthcare demand from the public to the private sector. This demand was initially characterized as "important" due to the volume of requested medical acts and was "remunerated," meaning patients directly bore the financial cost.

In response to this evolving situation, the Algerian state, through the law of July 12, 1983, instituted a 20% co-payment for socially insured individuals on all care received in private healthcare facilities. Specifically, Article 5 of this law stipulates that "in structures other than public health structures, the amount of the costs provided for and paid by the insured is reimbursed by the social security body on the basis of 80% of the rates fixed by regulation." This legal framework formally introduced patient financial participation in private sector healthcare in Algeria.

Algeria's compulsory health insurance system plays a pivotal role in healthcare financing. While it increasingly contributes to funding public health sectors, it maintains a distinct operational logic. Its primary function in this context is to reimburse healthcare costs incurred in the private sector, thereby facilitating the partial socialization of healthcare demand (Oufriha, 1992, p. 65).

Reimbursements from this system are determined by regulatory tariffs, which are based on professional acts listed in the 1987 General Nomenclature of Professional Acts, and the prices of medicines indicated on their

packaging. A crucial aspect of this system is the consistent protection of the "social dimension" by the State. This manifests through exemptions from co-payment for certain professional acts, specific pathologies, and particular categories of individuals, mirroring similar public procedures.

Following the introduction of co-payment in 1984, which involved users bearing a portion of their medical expenses, a further financial contribution was introduced in 1995. From this point, users were required to pay a lump-sum contribution for healthcare services received in the public sector. This meant that rates similar to those applied in the private sector (official rates from 1987, forming the basis of reimbursement with the CNAS) were implemented: 50 Algerian Dinars (DA) for a general practitioner consultation, 100 DA for a specialist consultation, and 100 DA for a day of hospitalization (Cheriet, 2001, p. 63). However, this measure did not alter the operational conditions of the public sector nor did it rectify its existing dysfunctions. The financial impact of this initiative proved to be modest, accounting for only 3.26% of public sector resources in 1995, and subsequently declining to 1.5% by 2000 (Oufriha, 2006a).

This financial participation was primarily intended as a reinforcement to financing rather than a mechanism to regulate the demand for healthcare services. This policy decision coincided with the commencement of Algeria's structural adjustment program, specifically its macroeconomic stabilization component.

In Algeria, the application of a uniform co-payment rate often leads to a reduction in healthcare consumption, particularly among low-income populations, the seriously ill, and the elderly requiring long-term care. This is especially true in the absence of supplementary insurance. Given their precarious economic and social circumstances, these vulnerable groups frequently lack access to additional insurance coverage (e.g., mutual or group insurance), which exacerbates inequalities in healthcare access. To mitigate these adverse effects, co-payment policies are commonly modulated based on income levels or the specific characteristics of a disease (Ouzir, 2009).

c. De-listing

De-listing, which involves removing specific products and services from the reimbursed healthcare basket, has been adopted by several countries as a strategy to streamline health expenditure.

In Algeria, the fundamental principle of drug reimbursement by the social security system is enshrined in Law 83-11 of July 2, 1983, on social insurance. For a drug to be eligible for reimbursement, the concerned laboratory must submit a reimbursement request. This request must be accompanied by documentation justifying the product's registration, a technical file, and a price sheet for imported drugs, or a certificate of the public selling price (APP) for locally manufactured products (Snoussi, 2013, p. 221).

Prior to 1995, all prescribed drugs were automatically reimbursed. However, since then, relevant officials have sought to revise the reimbursement nomenclature by introducing the concept of non-reimbursement by social security. This measure is grounded in the principle of removing products from the "refundable" list that lack proven medical and therapeutic benefit.

Furthermore, Algeria's drug reimbursement policy for social security focuses on selecting drugs from those registered and marketed within the country based on their Medical Service Rendered (SMR) and its Improvement (ASMR) in their country of origin. This approach has led to some inconsistencies: a number of drugs not reimbursed in their countries of origin are, paradoxically, reimbursed in Algeria. Conversely, other drugs that are reimbursed at a 35% rate in their countries of origin are either not reimbursed at all in Algeria or are reimbursed at a minimal rate (Abbou, 2011, p. 16). While the De-listing of drugs plays a considerable role in rationalizing pharmaceutical spending, it's important to acknowledge its inherent disadvantages for low-income policyholders. Their limited financial resources often prevent them from affording the cost of non-reimbursable medications. For this measure to be truly effective, it should extend beyond domestically produced drugs to primarily target imported ones. Additionally, the list of non-refundable drugs ought to encompass both imported medications and princeps (originator drugs).

According to (Oufriha, 2006b), these demand-side measures exhibit certain, albeit limited, degree of economic efficiency. However, they also raise critical questions concerning differential equal access to healthcare

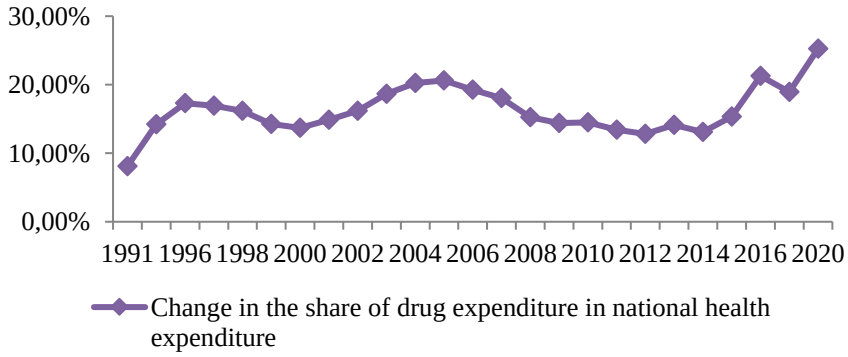
based on an individual's ability to contribute financially. Furthermore, there is a tangible risk of gradually excluding a growing segment of the population from the healthcare system. While such exclusion might not exist *de jure*, it certainly manifests *de facto*. This situation is primarily a consequence of the "misadministration" of the healthcare system, rather than the underlying principles guiding it (Oufriha, 2006b).

3.2. Outcomes of Demand-Side Regulation through Patient Financial Accountability

Despite concerted efforts by Algerian public authorities and the implementation of various measures aimed at controlling pharmaceutical expenditure, these initiatives have not yielded the anticipated outcomes. Pharmaceutical costs continue to constitute a significant portion of overall health expenditure, placing a substantial burden on both social security and state funds.

a. Evolution of Pharmaceutical Spending's Contribution to Algerian National Health Expenditure: Between 1991 and 2020, the share of drug expenditure within national health expenditure in Algeria witnessed a substantial increase, rising from 8.1% in 1991 to 25.23% in 2020. This represents an increase of over 211.48% within a 29-year period. Several factors contribute to this notable rise in pharmaceutical spending, including the expansion of social coverage, the growth in both public and private healthcare provision, and the increasing prevalence and burden of chronic diseases.

Fig.2. Change in the share of drug expenditure in national health expenditure between 1991 and 2020



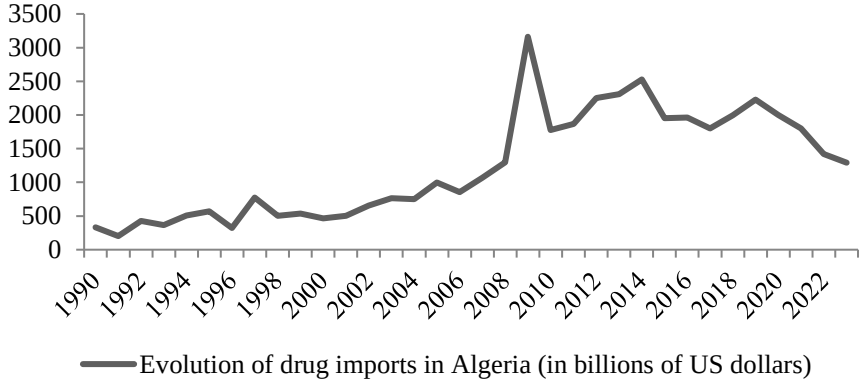
Source: By authors based on data from the (MSPRH, 2024)

b. Evolution of drug imports

Algeria has experienced a substantial rise in pharmaceutical imports over the past two decades. Between 1990 and 1995, import values surged from $333 million to $567.67 million, marking an increase of over 70.47% within a five-year span. This increase is primarily attributable to the successive devaluations of the Algerian Dinar, which translated into higher import prices when denominated in the local currency. From 1995 to 2008, pharmaceutical imports continued their significant ascent, registering a growth rate of 128.46%. This surge is largely a consequence of the triple transition: economic, demographic, and epidemiological that Algeria underwent during this period.

A slight decline in pharmaceutical imports was observed from 2009 onwards, following the decision to prohibit the import of domestically manufactured medicines. Specifically, import values decreased from $2,161.32 million in 2009 to $2,120.14 million in 2023 (or use the whole numbers: $2161 million to $2120 million). Nevertheless, despite this reduction, the overall import bill for pharmaceuticals remains substantial.

Fig.3. Evolution of drug imports in Algeria between 1990 and 2023



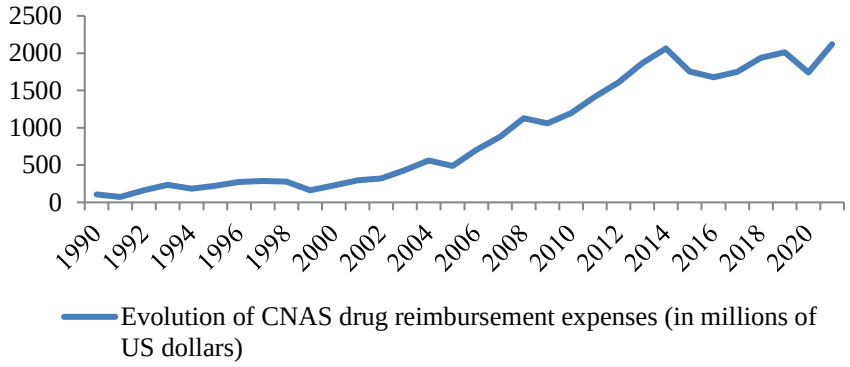
Source: By authors based on data from the (MSPRH, 2024)

c. Impact on CNAS drug reimbursement

Despite various measures implemented to control pharmaceutical reimbursement expenditure by the Caisse Nationale des Assurances Sociales (CNAS), these costs have continued to escalate. In 2023, CNAS reimbursements exceeded 288 billion Algerian Dinars (DA), a significant increase from merely 0.5 billion DA in 1988, representing a substantial

multiplication over this period. This sharp rise is attributed to several factors: the demographic transition and the reversal of the age pyramid, an increase in life expectancy, the evolving burden of chronic pathologies, and the continuous enhancement of social and health coverage.

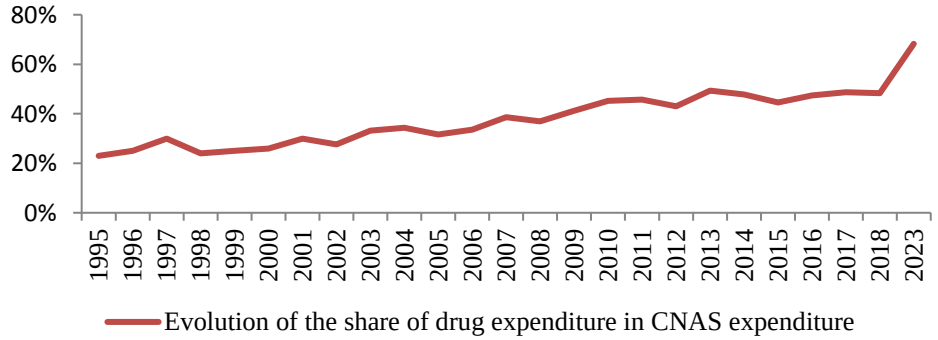
Fig. 4. Evolution of CNAS drug reimbursement expenses between 1990 and 2023



Source: By authors based on data from (CNAS, 2024)

Furthermore, it is noteworthy that social security continues to allocate substantial funds to pharmaceuticals. The proportion of drug expenditure within total CNAS expenditure increased from 23% in 1995 to 68.25% in 2023, signifying a 196.74% rise. This overarching trend of increasing social security expenditure on drugs is a direct outcome of the expansion of the third-party payer system and the effects of the health transition experienced by Algeria.

Fig. 5. Evolution of the share of drug expenditure in CNAS expenditure between 1995 and 2023



Source: By authors based on data from (CNAS, 2024)

4. CONCLUSION

This study highlights that pharmaceutical expenditure constitutes a substantial, if not paramount, proportion of total health expenditure, making its effective control crucial for overall healthcare cost management. This spending significantly contributes to the escalation of social security expenditure, potentially leading to a structural deficit within the system.

In response to this phenomenon, Algeria has implemented various measures aimed at reducing pharmaceutical expenditure. These measures primarily focus on demand-side management, encompassing strategies such as co-insurance (or cost-sharing), reference pricing, and drug de-listing (or non-reimbursement). While these interventions largely target consumer behavior, their impact on the supply side remains minimal. This approach is partly attributable to recommendations from the World Bank, which encouraged Algerian authorities to rationalize demand in line with a "cost recovery" logic.

However, despite these governmental efforts and implemented measures, the desired containment of pharmaceutical expenditure has not been achieved. Drug spending continues to exhibit consistent increases, placing a considerable burden on social security funds.

Given this persistent challenge, the continuation of reforms initiated by public authorities is imperative. The Algerian State possesses several untapped regulatory tools that could be instrumental in controlling drug spending, despite their recognized importance. These include the regulation of healthcare professions, particularly concerning prescription oversight. This is especially critical given the expansion of the private sector and the development of private ambulatory medicine, both of which are likely to further increase the volume of prescriptions.

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